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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/078,203	02/19/2002	Shrenik Deliwala	53168-500301D5	6291

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EXAMINER

ULLAH, AKM E

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 09/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/078,203

Applicant(s)

DELIWALA, SHRENIK

Examiner

Akm Enayet Ullah

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) 31,32,35,36,53,54,57 and 58 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30,33,34,37-52,55 and 56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4/02.
- 4) ☒ Interview Summary (PTO-413) Paper No(s). 08-03.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: IDS: 11/02 and 03/03.

Detailed Action

Applicant cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Status of the Application

Claims 1- 58 are pending in this application

Restriction to one of the following inventions is required under 35 U.S.C.

121:

- I. Claims 1-30, 33-34,37-52 and 55-56, drawn to an optical device formed in a SOI wafer, classified in class 385, subclass 12.
- II. Claims 31-32, 35-36 , 53-54 and 57- 58 drawn to a method of forming an optical device in a SOI wafer, classified in class 438, subclass 689.

Product And Process Of Making

Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case. Group I invention can form an integrated optical/electronic circuit by using various etching and cutting and polishing techniques besides the techniques mentioned in Group II invention. Such as lithography process.

Conclusion To All Restriction Requirements

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification and the search required for invention I is not required for invention II, restriction for examination purposes as indicated is proper.

Requirement, When Elected By Telephone

During a telephone conversation with Ms. Wendy Koba on August 20, 2003 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-30, 33-34, 37-52 and 55-56. Affirmation of this election must be made by applicant in replying to this Office action. Claims 31-32, 35-36 and 53-54 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Joint inventors, Correction of Inventorship

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

If applicant is aware of any prior art or any other co- pending application not already of record, he/she is reminded of his/her duty under 37 CFR 1.56 to disclose the same.

Drawings

This application has been filed on February 20, 2003 with a formal drawings, which are acceptable.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1- 30, 33-34, 37-52 and 55-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuwabara et al (USPNO. 6,596,610) in view of Tangonan et al (USPNO. 4,403,825) and Yamamoto et al (USPNO. 6,078,707).

Kuwabara et al disclose an optical device formed on a Silicon- On- Insulator (SOI) wafer

An upper silicon layer formed on the SOI wafer, the upper silicon layer at least partially forming a waveguide and

A waveguide mirror formed in the upper silicon layer (columns 5, 1st paragraph and column 10, 5th paragraph of the reference).

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Note that using silicon layer at least partially forming a waveguide is not explicitly mentioned in the reference. But it is an inherent of the reference in this optical device art.

Regarding claims 33-34 and 55-56 having a glass layer formed across at least part of the upper silicon layer as follows:

A thin film of glass layer deposit on SOI wafer to form a waveguide is very elementary teaching in this integrated optical art as is shown by Tangonan et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the silicon layer partially to form a waveguide on SOI wafer instead of glass layer in order to form a waveguide since Tangonan et al having a waveguide layer formed on the top of surface using a chalcogenide glass, where needed, involves only routine skill in the art. *In re Stevens*, 101 USPQ 284 (CCPA 1954).

Regarding claim 30 an optical device formed in a wafer also teaches in Kuwabara et al reference since it is not limited to SOI wafer.

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Regarding 37 and 52 a waveguide lens formed in the upper silicon layer, wherein the waveguide lens is formed at least in part by etching the upper silicon layer of the SOI wafer is also well known in this integrated optical art as is shown by Yamamoto et al (USPNO. 6,078,707). For details see columns 19-20 and 31-32 of Yamamoto et al. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to use the waveguide lens formed on a wafer teachings of Yamamoto et al in an optical device where an optical device formed in a SOI wafer of Kuwabara et al which would be arranged along with a field effect transistor (FET) which would control the light flowing there through to perform various functions.

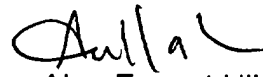
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Akm Enayet Ullah whose telephone number is 703-308-4885. The examiner can normally be reached on Mon.- Wed. 5.00-3:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on 703-3084819. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7721 for regular communications and 703-308-7721 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Akm Enayet Ullah
Primary Examiner
Art Unit 2874

AUllah
August 25,2003